



Earth Science

GEL 109.11

Winter 2020

Number of Credits: 4

Days Class Meets: Online

Instructor: Jen Kettle

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Course Description

Students will develop an earth science skill-set to understand the four strands of scientific investigation: content, process, communication, and the nature of science. The foundation for earth science will be constructed using the four strands as they pertain to the atmosphere, biosphere, lithosphere, and hydrosphere. The fundamental concepts in earth science, like cycles, geological time, geology, geochemistry, geophysics, and biosphere interactions are presented in context with current issues. The students will compare and contrast the content and process through communications with their peers and the instructor, ultimately understanding the nature of science. The four strands will improve the student's scientific literacy which will support the enduring understanding of the building blocks of the sciences in earth science. This course is designed for people interested in earth issues using their computational skills and includes a strong laboratory component.

Upon completing this course students will retain a skill-set derived from critical thinking and environmental scientific methodology. This skill-set can be used in science classes following Earth science, and in problem solving needs throughout their lives. Although this course is an introductory class, **introductory does not translate into easy!** This course does not require background knowledge in earth science. It will require effort to build the scientific foundation and the philosophical underpinnings of critical thinking and scientific thought. Students will **have** to spend time studying the material in order to be successful. **You are responsible for the resulting grade that you shall receive.**

Course Objectives

- Understand how the nature of science is a result of the content, process, and communication; and, how this process is self-correcting.
- Identify the big ideas in scientific discourse including how levels of scientific hierarchy pertain to biotic and abiotic properties of earth science.
- Integrate information of natural processes that govern the natural world into laboratory and field practice.
- Critically evaluate data drawn from natural phenomena to establish a scientific baseline.
- Understand the connection between physical and chemical cycles as they relate to Earth's domains.
- Measure environmental variables and interpret results of scientific studies of earth science problems.
- Understand how the mechanisms of geology, physics, chemistry, and biology interact to create emergent processes of systems.
- Understand sustainability as it relates to the earth sciences and evolution.

General Education Outcomes:

All JC graduates should develop or enhance certain essential skills while enrolled in college.

Essential Competencies

1. Think critically and act responsibly
2. Work productively with others, recognizing individual contributions to group success
3. Exhibit technological literacy

The General Education Outcomes addressed in this class are:

GEO 4: Scientific Reasoning. Students will be able to design and carry out valid experiments to assess a given hypothesis, and to draw appropriate conclusions based on the results.

Textbook

Lecture Text: **The Changing Earth: Exploring Geology and Evolution**, 7th Ed. Monroe and Wicander; ISBN10: 1-285-73341-X; ISBN13: 978-1-285-73341-8

Textbook Zero: ISBN-10: 1305153332 ISBN-13: 9781305153332 All students have a digital copy.

Lab Manual: Available on JetNet

Grading Procedure

Your grade will be based on the number of points you accumulate throughout the semester. There are ~600 possible points in this course. The breakdown of points is as follows:

Exams (400 Points): There are five (5) exams throughout this course. Each exam is worth 100 points. The **lowest** exam score (Exams 1-4) will be dropped at the end of the semester. For this reason, exams **CANNOT** be made up. Any missed exam will automatically count as the dropped exam. There will be a cumulative final exam which cannot be dropped. **** Except for Exam 3, all exams will open on Thursday at 8am and will close the following Saturday at 5pm. They are timed and are limited to one attempt. **All exams must be taken at an approved testing center. If you are not utilizing the Jackson College testing lab on main campus, it is your responsibility to find an approved testing lab and notify the instructor of your preferred location at least one week prior to the exam opening dates.**** The website for the Jackson College (main campus) testing lab is <https://www.jccmi.edu/testing-lab/>

Assignments and Forum Posts: Science is an interactive process. Throughout the semester there will be opportunities for you to earn participation points by answering questions posed in the lecture portion of the class. You will submit your responses to questions via JetNet by either responding to the forum posts, completing quizzes, by uploading a PDF file, which must include your name, or via video submission by the due date assigned. A YouTube account may be helpful!

Labs (120 Points): There are twelve (12) lab assignments in this course, each worth 10 points. Labs are open for approximately one week and are due as stated in the schedule. Please do not wait until the last minute to begin the lab as I may not have time to answer questions that arise! Labs assignments must be handwritten, scanned, and submitted in PDF format – a video is posted on the course page should you need further instructions on converting to a PDF. File names should include your last name and the name of the lab; for example, “**KettleGraphingLab.PDF**”. You will receive a zero if any of the following occurs; the lab is not legible, it is not handwritten, it is not the most current version of the lab, it is not submitted as a PDF, it has an improper file name, your name is not written on the lab, or there is ANY form of plagiarism or cheating. **Should a student miss three lab assignments or receive three “zeros” on lab assignments (or any combination of missing/zero grade assignments) that student will have to repeat the course and will receive a failing grade for the semester.**

Lab Practicals (50 Points): There are two (2) lab practicals scheduled, each worth 25 points. Lab practicals will be posted on JetNet and will open one week prior to the due date. Lab practicals do not have to be taking at a testing center. They are timed and limited to one attempt. Due dates are listed in the syllabus.

Extra Readings – There may be times when additional readings are selected in order to solidify your understanding of the week’s topic. Though you will receive no grade for reading them, participation points may be awarded for class discussions related to these readings.

Extra Credit – Extra credit is **not** given in the course. Focus your time and energy on completing course assignments and studying for exams.

Grading Scale

Percent	Grade	Percent	Grade	Percent	Grade
90 - 100%	4.0	75 – 79 %	2.5	60 – 64 %	1.0
85 – 89 %	3.5	70 – 74 %	2.0	55 – 59 %	0.5
80 – 84 %	3.0	65 – 69 %	1.5		

Incompletes - Consistent with JC policy, incompletes are granted with instructor permission only in situations where a student is **passing** the course with 90% of the curriculum covered and encounters an unusual emergency that prevents them from completing coursework.

Academic Honesty Policy

Academic Honesty is defined as ethical behavior that includes student production of their own work and not representing others' work as their own, by cheating or by helping others to do so.

Plagiarism is defined as the failure to give credit for the use of material from outside sources. Plagiarism includes but is not limited to:

- Submitting other's work as your own
- Using data, illustrations, pictures, quotations, or paraphrases from other sources without adequate documentation

- Reusing significant, identical or nearly identical portions of one's own prior work without acknowledging that one is doing so or without citing this original work (self-plagiarism)

Cheating is defined as obtaining answers/material from an outside source without authorization. Cheating includes, but is not limited to:

- Plagiarizing in any form
- Using notes/books/electronic material without authorization
- Copying
- Submitting others' work as your own or submitting your work for others
- Altering graded work
- Falsifying data
- Exhibiting other behaviors generally considered unethical
- Allowing your work to be submitted by others

Consequences/Procedures

A faculty member who suspects a student of academic dishonesty may penalize the student by taking appropriate action up to and including assigning a failing grade for the paper, project, report, exam or the course itself. Instructors should document instances of academic dishonesty in writing to the Dean of Faculty.

Student Appeal Process

In the event of a dispute, both students and faculty should follow the Conflict Resolution Policy. The policy is presented in the Student Rights and Responsibilities section of the student handbook. **The first step of this process is to set up a scheduled conference with the instructor to discuss the issues of concern.**

Student Responsibilities

Contribute to a courteous learning environment – Our class interactions are valuable because science is a social exercise. Please be polite, especially on discussion topics, to avoid confusion be positive in all communications. **Disrespectful behavior will be dealt with summarily** focusing on clarity and understanding.

Study - This is a difficult course that will take significant study time. You will need to use the text and other given resources, such as review notes, and do study questions to prep for exams.

Communication with your Professor

Your student email will be the official communication format for any grade requests or participation questions. Please take the time to familiarize yourself with your JC email. Be aware when you send a message to me on JetNet, the message goes to my JC email. The reply will go to your JC email. If you think I didn't see it, please send me an official email through your my.jccmi.edu account.

Attendance Policy

In compliance with Federal Title IV funding requirements, as well as college initiatives, I will be monitoring attendance at least weekly throughout the term to assure compliance with college policy and federal regulations. It is imperative that you log in to the course and actively participate within the first couple days of the term to validate your enrollment in the course.

If you do not participate as expected for a college student, then you will be dropped from the class (meaning you are no longer attending and/or participating in class). There are several reasons you may be dropped, which I will address in a moment, but it is important to note that once you have been dropped from a class by an instructor you cannot be put back into the class without the instructor's signature.

Students own the responsibility of the effect of being dropped. Be aware that being dropped from the class may affect financial aid, sports scholarships, or housing status. If you are dropped, the drop status will NOT be changed due to the impact on financial aid, housing status, athletic eligibility, etc. As a college student you are responsible for how your class attendance and participation may impact your academic progress; the accountability lies with you.

Possible Reasons for Being Dropped from the Course

- Failure to attend class within the first week without contacting me
- Failure to complete the Syllabus Quiz before the due date
- Failure to complete two (2) consecutive forum posts and/or weekly assignments
- Failure to complete two (2) exams
- Failure to complete three (3) laboratory assignments

These conditions will result in an automatic withdrawal during the next week and your dismissal from the course. **If you fail to participate after the last withdrawal date (1 week after midterm) you will not be automatically dropped from the course but will receive a grade of 0.0 (E) for failing to participate in the course.**

Important Dates: Winter 2020

DATE	EVENT
JAN. 13, 2020	DAY AND EVENING CLASSES BEGIN
JAN. 31, 2020	IN-SERVICE DAY. NO CLASSES
MAR. 9-15, 2020	SPRING BREAK. NO CLASSES
MAY 3, 2020	END OF WINTER SEMESTER
MAY 5, 2020	GRADES DUE

Calendar

Week of	Topic	Ch	Lab
Jan 13	Introduction	1	Graphing Lab due Sunday Jan 19 th @ 11:55pm
Jan 20	Plate Tectonics	2	Scientific Measurements Lab due Sunday Jan 26 th @ 11:55pm
Jan 27	Rocks and Minerals	2	Density Lab due Sunday Feb 2 nd @ 11:55pm
Feb 3	EXAM 1 (Ch. 1, 2, 3) due Saturday Feb 8th @ 5pm / Igneous Rocks	4	Mineral ID Lab due Sunday Feb 9 th @ 11:55pm
Feb 10	Sedimentary Rocks / Metamorphic Rocks	7,8	Igneous Rocks Lab due Sunday Feb 16 th @ 11:55pm
Feb 17	EXAM 2 (Ch. 4, 7, 8) due Saturday Feb 22nd @ 5pm / Weathering, Erosion, and Soils	6	Sedimentary Rocks Lab due Sunday Feb 23 rd @ 11:55pm
Feb 24	Volcanoes and Volcanism	5	Metamorphic Rocks Lab due Sunday Mar 1 st @ 11:55pm
Mar 2	Deformation and Mountain Building	10	Practical 1 due Sunday Mar 8th @ 11:55pm
Mar 16	EXAM 3 (Ch. 6, 5, 10) due Monday Mar 23rd @ 5pm		NO LAB DUE
Mar 23	Earthquakes and Earth's Interior	9	Basketball Earth Lab due Sunday Mar 29 th @ 11:55pm
Mar 30	Running Water	12	Isostasy Lab due Sunday Apr 5 th @ 11:55pm
Apr 6	Groundwater	13	Climate Change Lab due Sunday Apr 12 th @ 11:55pm
Apr 13	EXAM 4 (Ch. 9, 12, 13) due Saturday Apr 18th @ 5pm / Glaciers and Glaciation	14	Geologic Time Lab due Sunday Apr 19 th @ 11:55pm
Apr 20	Geologic Time / Evolution	17	Evolution Lab due Sunday Apr 26 th @ 11:55pm
Apr 27	Cumulative Final Exam due Saturday May 2nd @ 5pm		Practical 2 due Saturday May 2nd @ 5pm

*****Instructor reserves the right to alter this syllabus, including exam dates.**

Learning Contract – By completing the Syllabus Quiz on JetNet, you acknowledge that you have read and understand the content of this syllabus. This quiz is due by **Friday January 17th @ 5pm. This quiz must be completed to remain in the course!**